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Abstract

PURPOSE:To make it possible to obtain a precisely controlled regular mixed crystal in a short time by performing a growth under a specified condition on the moving time of a substrate crystal and the exposure time of the substrate crystal.

CONSTITUTION:A growth is performed under a condition that the moving time of a substrate crystal 8 is shorter than the staying time of the constituent atom adsorbed on the substrate or a gas containing that atom, and that the exposure time of the substrate crystal into the constituent atom or the gas containing that atom is sufficiently long as compared with the staying time of the constituent atom adsorbed on the substrate or the gas containing that atom. If, in a reaction chamber 1, the substrate is moved in a time shorter than the mean staying time after adsorption of the constituent atom, the effect of the constituent atom on the monomolecular adsorption can be ignored even if the gas of the constituent atom exists when the substrate is moved. Also, if the staying time of the substrate crystal in the reaction chamber 1 and a reaction chamber 3 of the substrate crystal is established larger than the mean staying time, the gaseous partial pressure of either one is zero, and that adsorbed seed crystal is eliminated, the surface of which is covered with the gas within the reaction chamber, whereby a regular mixed crystal is obtained with good controllability.